

## **Paleovolcanic Edifice Rebuilding in the Southeastern Margin of the Songliao Basin, NE China**

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The paleovolcanic edifices of Yingcheng formation cropped out well in the northeastern margin of the Songliao basin, NE China. Location of the ancient crater and the pyroclastic sediments on the volcano slope have been determined, While the lithology and lithofacies association in this caldera formation are difficult to be rebuilt.

To correlate the strata on the volcano slope to the accumulation in the caldera and rebuild the volcanic edifice, in the studied area, two profiles have been researched in detail. The profile I is pyroclastic accumulation on the slope and the profile II is pyroclastic and lava accumulation in the crater. The strata in profile I can be divided into 11 cooling units, 5 systems and 2 cycles and the profile II into 6 bedded cooling units and 3 collapsed volcanic feeder. 43 samples are collected, each one corresponding to 1 cooling unit or 1 layer, the first 28 samples are from profile I, and another 15 samples from the profile II. Major elements and trace elements in these samples are analyzed.

Major elements of the pyroclastic rocks in bedded strata in two profiles have such two common features as follows: ⊖Contents of  $Al_2O_3$  and  $K_2O$  in the rock are inversely related to  $SiO_2$  and affected by the particle size; ⊖Content of  $Na_2O$  change little and unaffected by the particle size, but it increases where the lava appeared.

Trace element contents are controlled by the magma source, and unaffected by post-diagenetic changes. So the pyroclastic rocks and molten lava generated at the same times have a better corresponding in the trace element contents, especially the ratio of trace elements such as  $La/Sc$ ,  $Sc/Th$ ,  $La/Y$ ,  $Sc/Cr$  and  $Hf$ .

The result showed that the 6 cooling units, 3 system and 1 cycle in the caldera formation are correlated to the 5 cooling units, 2 system and 1 cycle on the top of the volcanic slope. By this way, the pyroclastic rocks and the molten lava could be correlated with each other and The paleovolcanic edifice could be rebuilt in the southeastern margin of the Songliao basin, NE China.

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